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HEWLETT-PACKARD COMPANY
Legal Department, 208N
P. O. Box 10301
Palo Alto, California 94303-0890

PATENT APPLICATION

ATTORNEY DOCKET NO. 10980543-1

ASSIGNMENT OF PATENT APPLICATION

I/We, the undersigned (each) have agreed and hereby agree to assign to HEWLETT-PACKARD COMPANY, a Delaware corporation having its principal place of business in Palo Alto, California, (hereinafter HP), in furtherance of my/our obligations to HP, and do hereby assign and transfer to HP, its successors and assigns, the entire right, title and interest, including the right of priority, in, to and under an application for Letters Patent of the United States entitled:

PARTICLE TOLERANT PRINTHEAD

Filing date: October 26, 1998 Serial No.: 09/179,362

and the invention(s) and improvement(s) set forth therein, and any and all continuations, continuations-in-part (C-I-P's), divisionals, and renewals of and substitutes for said application for said Letters Patent, and any and all Letters Patent of the United States and of countries foreign thereto which may be granted thereon or therefor; and any reissues, or reexaminations, or extensions of said Letters Patent.

I/we additionally authorize HP to file applications in my/our name for Letters Patent in any country, to be held and enjoyed by HP, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by me/us had this assignment, and transfer not been made;

AND I/we hereby covenant that I/we have full right to convey the entire interest herein assigned, and that I/we have not executed and will not execute any agreement in conflict herewith, and I/we further covenant and agree that I/we will, each time a request is made, and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said invention(s) or improvement(s), said application and said Letters Patent, to HP, its successors, assigns, nominees or legal representatives, and I/we agree to communicate to HP, or to its nominee, all known facts respecting said invention(s) or improvement(s), said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers, to execute all disclaimers and declarations, and generally to do reissue and foreign applications, to make all rightful oaths and declarations, and generally to do everything possible to aid HP, its successors, assigns, nominees and legal representatives to obtain and enforce, for its or their own benefit, proper patent protection for said invention(s) or improvement(s) in any and all countries provided the expenses which may be incurred by me/us in lending such cooperation and assistance are paid by HP;

AND I/we hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents on applications as aforesaid, to issue to HP, as assignee of the entire right, title and interest, any and all Letters Patent for said invention(s) or improvement(s), including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

I/we further authorize and direct HP attorneys to insert the serial number and filing date of said application now identified by the attorney docket number and title set forth above as soon as the same shall have been made known to them by the United States Patent and Trademark Office.

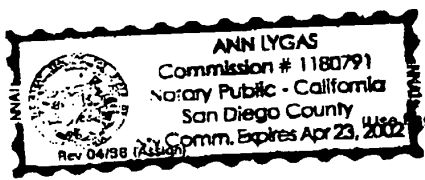
Inventor's Signature (6eal) Kenneth J. Courian Date Assignment Signed: 10-26-98

Inventor's Typed Name: Kenneth J. Courian Date Application Signed: 10-26-98

State of CALIFORNIA
County of SAN DIEGO

Before me this 21st day of October 1998, personally appeared Kenneth J. Courian who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Ann Lygas
Notary Public
My commission expires: 4/23/02



Page Two For Additional Inventor(s) Signature(s)

12-11-1998

FORM PTO-1595

1-31-92

MLO 12-7-98



100915265

Attorney Docket No. 10980543-1

1. Name of conveying party(ies):

Kenneth J. Courian 10/21/98
Thomas M. Sabo 10/14/98
Joe R. Pietrzyk 10/22/98
Stephen W. Bauer 10/20/98HEWLETT-PACKARD COMPANY
Legal Department, M/S 20BN
3000 Hanover Street
Palo Alto, CA 94304COPY OF PAPERS
ORIGINALLY FILEDAdditional name(s) of conveying party(ies) attached ☐ Yes ☒ NoAdditional name(s) & address(es) attached? ☐ Yes ☒ No

3. Nature of Conveyance:

☒ Assignment☐ Merger☐ Change of Name☐ Security Agreement☐ Other

Execution Date(s): 10/14/98; 10/20/98; 10/21/98; and 10/22/98

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, execution date of the application is:

A. Patent Application No.(s)

B. Patent No.(s)

Serial No.: 09/179,362 Date Filed: 10/26/98

Additional numbers attached? NO

5. Name and address of party to whom correspondence concerning document should be mailed:

Records Manager
HEWLETT-PACKARD COMPANY
Ann Lygas MS 66-838
16399 W Bernardo Dr
San Diego CA 92127-18996. Total number of applications and patents involved: 1

7. Total Fee (37 CFR 3.41): . . . \$40.00

☐ Enclosed☒ Authorization to be charged to deposit account.8. Deposit Account Number: 08-2025

12/11/1998 SBURMS 00000065 082025 09179362

01 FC4581 40.00 CH

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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Ann Lygas

Name of Person Signing

Signature

Dec 01, 1998

Date

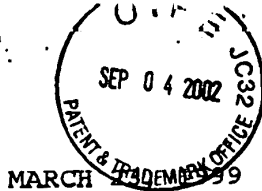
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MARCH 1999
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167399 W BERNARDO DR
MS 66-838
SAN DIEGO, CA 92127-1899

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APR 1 1999

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NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

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PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 12/07/1998

REEL/FRAME: 9625/0481
NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS)

ASSIGNOR:
COURIAN, KENNETH J.

DOC DATE: 10/21/1998

ASSIGNOR:
SABO, THOMAS M.

DOC DATE: 10/14/1998

ASSIGNOR:
PIETRZYK, JOE R.

DOC DATE: 10/22/1998

ASSIGNOR:
BAUER, STEPHEN W.

DOC DATE: 10/20/1998

ASSIGNEE:
HEWLETT-PACKARD COMPANY
3000 HANOVER STREET
LEGAL DEPARTMENT, M/S 20BN
PALO ALTO, CALIFORNIA 94304

SERIAL NUMBER: 09179362
PATENT NUMBER:

FILING DATE: 10/26/1998
ISSUE DATE:

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STEVEN POST, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

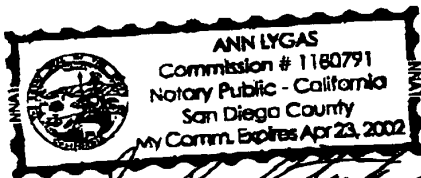
ASSIGNMENT OF PATENT APPLICATION (cont.)

IN WITNESS WHEREOF, I we hereunto s t my/our hand(s) and seal(s):

Thomas M. Sabo Date Assignment Signed: 14-OCT-98
Inventor's Signature (Seal)
Inventor's Typed Name: Thomas M. Sabo Date Application Signed: 14-OCT-98
State of CALIFORNIA) ss.:
County of SAN DIEGO)

Before me this 14th day of October 1998, personally appeared Thomas M. Sabo who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

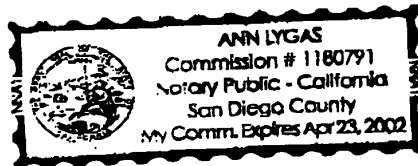
Ann Lygas
Notary Public
My commission expires: 4/23/02



Joe R. Pietrzyk Date Assignment Signed: 22-OCT-98
Inventor's Signature (Seal) Date Application Signed: 22-OCT-98
Inventor's Typed Name: Joe R. Pietrzyk
State of CALIFORNIA) ss.:
County of SAN DIEGO)

Before me this 22nd day of October 1998, personally appeared Joe R. Pietrzyk who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

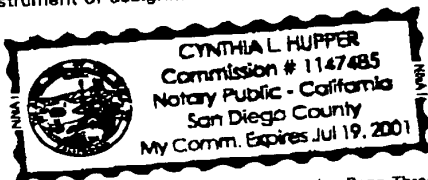
Ann Lygas
Notary Public
My commission expires: 4/23/02



Stephen W. Bauer Date Assignment Signed: Oct 20, 1998
Inventor's Signature (Seal) Date Application Signed: Oct 20, 1998
Inventor's Typed Name: Stephen W. Bauer
State of California) ss.:
County of San Diego)

Before me this 20th day of October 1998, personally appeared Stephen W. Bauer who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Cynthia L. Hupper
Notary Public
My commission expires: 7/19/2001



(Use Page Three For Additional Inventor(s) Signature(s))

Page 2 of 2

AUGUST 17, 2001



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Patent and Trademark Office
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16399 W BERNARDO DRIVE
SAN DIEGO, CA 92127-1899

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RECORDATION DATE: 08/16/2001

REEL/FRAME: 011870/0292
NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:
GIERE, MATTHEW D.

DOC DATE: 06/05/2001

ASSIGNOR:
HOLSTUN, CLAYTON

DOC DATE: 06/04/2001

ASSIGNOR:
FEINN, JAMES A.

DOC DATE: 06/05/2001

ASSIGNEE:
HEWLETT-PACKARD COMPANY
INTELLECTUAL PROPERTY
ADMINISTRATION
P.O. BOX 272400
FORT COLLINS, COLORADO 80527-2400

SERIAL NUMBER: 09876506
PATENT NUMBER:

FILING DATE: 06/06/2001
ISSUE DATE:

011870/0292 PAGE 2

SAUNDRA BALLENGER, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

08/17/01 FRI 12:23 [TX/RX NO 79411]

PATENTS ONLY

Attorney Docket No. 10006598-1

1. Name of conveying party(ies):

Matthew D. Giere - 6/5/2001
 Clayton L. Holstun - 6/4/2001
 James A. Feinn - 6/5/2001

2. Name and address of receiving party(ies):

HEWLETT-PACKARD COMPANY
 Intellectual Property Administration
 P.O. Box 272400
 Fort Collins, Colorado 80527-2400

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Additional name(s) of conveying party(ies) attached ☐ Yes ☒ NoAdditional name(s) & address(es) attached? ☐ Yes ☒ No

3. Nature of Conveyance:

☒ Assignment☐ Merger☐ Change of Name☐ Security Agreement☐ Other

Execution Date(s): June 4, 2001 and June 5, 2001

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, execution date of the application is:

A. Patent Application No.(s)

B. Patent No.(s)

Application No.: 09/876,506

Date Filed: Jun 6, 2001

Confirmation No.: 9309

Additional numbers attached? NO

5. Name and address of party to whom correspondence concerning document should be mailed:

Records Manager
 HEWLETT-PACKARD COMPANY
 Ann Lygas MS 66-838
 16399 W Bernardo Drive
 San Diego CA 92127-1899

6. Total number of applications and patents involved: 1

7. Total Fee (37 CFR 3.41): \$40.00

☐ Enclosed☒ Authorization to be charged to deposit account.8. Deposit Account Number: 08-2025

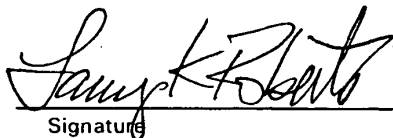
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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Larry K. Roberts

Name of Person Signing



Signature

Aug 16, 2001

Date

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Intellectual Property Administration
P. O. Box 272400
Fort Collins, Colorado 80527-2400

ASSIGNMENT OF PATENT APPLICATION

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BARRIER/ORIFICE DESIGN FOR IMPROVED PRINTHEAD PERFORMANCE

Filing date: 06/06/2001 Serial No.: 09/876,506

and the invention(s) and improvement(s) set forth therein, and any and all continuations, continuations-in-part (C-I-P's), divisionals, and renewals of and substitutes for said application for said Letters Patent, and any and all Letters Patent of the United States and of countries foreign thereto which may be granted thereon or therefor; and any reissues, or reexaminations, or extensions of said Letters Patent.

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AND I/we hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents on applications as aforesaid, to issue to HP, as assignee of the entire right, title and interest, any and all Letters Patent for said invention(s) or improvement(s), including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

I/we further authorize and direct HP attorneys to insert the serial number and filing date of said application now identified by the attorney docket number and title set forth above as soon as the same shall have been made known to them by the United States Patent and Trademark Office.

IN WITNESS WHEREOF, I/we hereunto set my/our hand(s) and seal(s):

Matthew Ginn
Inventor's Signature (Seal)

Date Assignment Signed: 6/5/2001

Inventor's Signature (Seal)

Inventor's Typed Name: **Matthew D. Giere**

Date Application Signed: 6/5/2001

State of California

1 SS.:

County of San Diego

Before me this ____ day of _____, personally appeared Matthew D. Giere who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public

My commission expires:

ASSIGNMENT OF PATENT APPLICATION (cont.)

IN WITNESS WHEREOF, I we hereunto set my/our hand(s) and seal(s):

Clayton L. Holstun Date Assignment Signed: 6/4/01
Inventor's Signature (Seal)

Inventor's Typed Name: Clayton L. Holstun Date Application Signed: 6/4/01

State of California)
) ss.:
County of)

Before me this ____ day of _____, personally appeared Clayton L. Holstun who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires:

James A. Feinn Date Assignment Signed: 6/5/2001
Inventor's Signature (Seal)

Inventor's Typed Name: James A. Feinn Date Application Signed: 6/5/2001

State of California)
) ss.:
County of San Diego)

Before me this ____ day of _____, personally appeared James A. Feinn who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires:

Inventor's Signature (Seal) Date Assignment Signed: _____

Inventor's Typed Name: _____ Date Application Signed: _____

State of)
) ss.:
County of)

Before me this ____ day of _____, personally appeared _____ who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

Notary Public
My commission expires: